

IN THE CLAIMS:

Claim 1 (currently amended) An isolated nucleic acid molecule that affects ~~for controlling~~ floral development in orchid, which nucleic acid molecule is selected from ~~form~~ the group consisting of:

(a) a nucleic acid molecule, *PeMADS2*, comprising the nucleotide sequence of SEQ ID NO: 1 ~~and the anti-sense strand thereof~~;

(b) a nucleic acid molecule, *PeMADS3*, comprising the nucleotide sequence of SEQ ID NO: 3 ~~and the anti-sense strand thereof~~;

(c) a nucleic acid molecule, *PeMADS4*, comprising the nucleotide sequence of SEQ ID NO: 5 ~~and the anti-sense strand thereof~~;

(d) a nucleic acid molecule, *PeMADS5*, comprising the nucleotide sequence of SEQ ID NO: 7 ~~and the anti-sense strand thereof~~; and

~~(e) one or more nucleic acid molecules hybridizing with the complement strand of any one of the nucleic acid molecules as defined in (a), (b), (c) and (d) under stringent hybridization conditions; and~~

~~(f) one or more nucleic acid molecules~~ (f) a nucleic acid molecule comprising the degeneration degenerate sequences of any one of the nucleotide sequences of SEQ ID NO: 1, 3, 5, or and 7 which encodes a PeMADS protein of SEQ ID NO: 2, 4, 6 or 8 respectively.

Claims 2 to 6 (cancelled)

Claim 7 (original) A vector comprising the nucleic acid molecule according to Claim 1.

Claim 8 (previously presented) The vector according to Claim 7, which is a shuttle vector that is capable of expressing the nucleic acid molecule in a plant.

Claim 9 (original) The vector according to Claim 7 comprising an inducible promoter.

Claim 10 (original) A kit for controlling floral development in orchid, which comprises the vector according to Claim 7.

Claim 11 (original) A cell transformed with the vector according to Claim 7.

Claim 12 (previously presented) A transgenic orchid comprising cells which contain the nucleic acid molecule according to Claim 1.

Claim 13 (previously presented) A transgenic orchid produced by transforming an orchid with the vector of claim 7.

Claim 14 (original) The cell according to Claim 11, wherein the cell is a prokaryote cell.

Claim 15 (original) The cell according to Claim 11, wherein the cell is an orchid cell.

Claim 16 (original) The cell according to Claim 11, wherein the cell is a *Phalaenopsis* spp. cell.

Claim 17 (original) A method for producing a transformed orchid cell comprising introducing the nucleic acid molecule according to Claim 1 into an orchid cell to obtain the orchid transformed cell.

Claim 18 (original) The method according to Claim 17, wherein the orchid is a *Phalaenopsis* spp.

Claim 19 (original) The method according to Claim 17, wherein the orchid cell is derived from a protocorn-like body.

Claim 20 (original) The method according to Claim 17, wherein introducing the nucleic acid molecule into the orchid cell is by a gene gun.

Claim 21 (currently amended) A protocorn-like body comprising a vector comprising the nucleic acid molecule according to Claim 1.

Claim 22 (original) A method for producing a transgenic orchid comprising the steps of:

- (a) introducing the nucleic acid molecule according to Claim 1 into an orchid cell to obtain an orchid transformed cell; and
- (b) regenerating the orchid transformed cell to obtain the transgenic orchid plant.

Claim 23 (original) The method according to Claim 22, wherein the orchid plant is a *Phalaenopsis spp.*

Claim 24 (original) The method according to Claim 22, wherein the orchid cell is derived from a protocorm-like body.

Claim 25 (original) The method according to Claim 22, wherein the nucleic acid molecule is introduced into the orchid cell in step (a) by a gene gun.

Claim 26 (previously presented) A transgenic orchid produced according to the method according to Claim 22.

Claim 27 (original) A protein encoded by the nucleic acid molecule according to Claim 1.

Claim 28 (withdrawn) A protein for controlling floral development in orchid, which is selected from the group consisting of PeMADS2 having a sequence of SEQ ID NO:2, PeMADS3 having a sequence of SEQ ID NO:4, PeMADS4 having a sequence of SEQ ID NO:6, and PeMADS5 having a sequence of SEQ ID NO:8.

Claim 29 (withdrawn) A method comprising :(a) providing the protein according to Claim 27, and (b) using the protein for controlling floral development in *Phalaenopsis spp.*

Claim 30 (previously presented) A method for controlling floral development in orchid, which comprises: (a) providing an orchid plant with a nucleic acid molecule according to claim 1, said nucleic acid molecule encoding a protein that is expressed in said plant in an amount; and (b) changing the amount of the protein in the plant.

Claim 31 (currently amended) The method according to Claim 30, wherein the amount of the protein is changed by inducing, inhibiting ~~and~~ or deleting the expression of the nucleic acid molecule.

Claim 32 (currently amended) The method according to Claim 30, wherein the amount of the protein is changed by increasing or decreasing ~~the ploid~~ a number of the nucleic acid molecule in a chromosome set of at least one cell of the plant.

Claim 33 (previously presented) The method according to Claim 30, wherein the amount of the protein is changed by using a gene gun to introduce the nucleic acid molecule into the cell.

Claim 34 (original) The method according to Claim 33, wherein the cell is derived from a protocorn-like body.

Claim 35 (cancelled)

Claim 36 (new). The isolated nucleic acid molecule according to Claim 1, which comprises the

nucleotide sequence of SEQ ID NO: 1.

Claim 37 (new). The isolated nucleic acid molecule according to Claim 1, which comprises the nucleotide sequence of SEQ ID NO: 3.

Claim 38 (new). The isolated nucleic acid molecule according to Claim 1 which comprises the nucleotide sequence of SEQ ID NO: 5.

Claim 39 (new). The isolated nucleic acid molecule according to Claim 1, which comprises the nucleotide sequence of SEQ ID NO: 7.